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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/804,328

03/12/2001

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04/19/2007

EXAMINER

JOHNSON, EDWARD M

ART UNIT

PAPER NUMBER

1754

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/19/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

09/804,328

Applicant(s)

CHEN ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3,5-7,10-14 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,5-7,10-14 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3, 10-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riley et al. US 5,200,162 in view of Fetzer '928.

Regarding claim 18, Riley '162 discloses a process for nitrous oxide decomposition comprising contacting a nitrous oxide and NO<sub>x</sub> stream with ammonia and zeolite (see column 4, lines 34-38 and column 8, lines 48-51), at 150-550 degrees Celsius (see column 5, line 1).

Riley '162 fails to disclose beta zeolite selective for simultaneous reduction.

Fetzer '928 discloses beta zeolite (see above).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the beta zeolite selective of simultaneous reduction of

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Fetzer in the nitrous oxide decomposition process of Riley because Fetzer discloses his beta zeolite as particularly suitable to make possible the reduction or decomposition of nitrous oxide (see column 4, lines 14-23) and precious metals for both nitrous oxide and NO<sub>x</sub> (see column 4, lines 65-68 and column 8, lines 50-51).

Regarding claim 3, Riley '162 discloses 150-550 degrees Celsius (see column 5, line 1).

Regarding claims 10-11, Riley '162 discloses iron-exchanged zeolites (see column 5, lines 10-13).

Regarding claims 12-14, Riley '162 discloses up to 30% or significantly lower (see claim 3, and column 1, lines 19-26).

3. Claims 3, 5-7, 10-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. US 4,571,329 in view of Fetzer '928.

Regarding claim 18, Kato '329 discloses a process for ammonia reduction of nitrous oxide comprising contacting nitrous oxide containing gas with ammonia (abstract) and zeolite (see column 3, lines 43-48) and discloses removal of NO<sub>x</sub> and N<sub>2</sub>O (abstract).

Kato fails to disclose beta zeolite selective for simultaneous reduction.

Fetzer '928 discloses beta zeolite (see above).

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It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the beta zeolite of Fetzer in the nitrous oxide decomposition process of Riley because Fetzer discloses his beta zeolite as particularly suitable to make possible the reduction or decomposition of nitrous oxide (see column 4, lines 14-23) and precious metals for both nitrous oxide and NOx (see column 4, lines 65-68 and column 8, lines 50-51).

Regarding claims 3, Kato '329 discloses 300-500 degrees Celsius (see column 7, line 30).

Regarding claims 5-7 and 12-14, Kato '329 discloses 1000 ppm of N<sub>2</sub>O and ammonia (see column 7, lines 22-25).

Regarding claims 10-11, Kato '329 discloses Fe exchanged zeolite (see column 4, lines 23-25).

4. Claims 3, 10-11, and 18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchitani et al. US 5,756,057 in view of Fetzer '928.

Regarding claim 18, Tsuchitani '057 discloses a method for removal of NOx comprising contacting a stream containing N<sub>2</sub>O (see column 4, lines 33-36) with reducing agent such as ammonia (see column 4, lines 41-43 and 48-50) and a catalyst comprising a zeolite (see column 5, lines 7-11, Example 21, and Table 1).

Tsuchitani fails to disclose beta zeolite.

Fetzer '928 discloses beta zeolite (see above).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the beta zeolite of Fetzer in the nitrous oxide decomposition process of Riley because Fetzer discloses his beta zeolite as particularly suitable to make possible the reduction or decomposition of nitrous oxide (see column 4, lines 14-23) and precious metals for both nitrous oxide and NO<sub>x</sub> (see column 4, lines 65-68 and column 8, lines 50-51).

Regarding claim 3, Tsuchitani '057 discloses a temperature of 400 degrees (see column 20, lines 46-59 and 65-66).

Regarding claims 10-11, Tsuchitani '057 discloses exchanging with an ionic copper amine complex (see Example 21).

#### ***Response to Arguments***

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

It is argued that the disclosed beta zeolite would not be selective for "simultaneous" reduction of both nitrous oxide and NO<sub>x</sub>. This is not persuasive because beta zeolite is disclosed and it would be obvious to one of ordinary skill that the prior art beta zeolite would have the same properties as the claimed

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beta zeolite with respect to selectivity, simultaneous or otherwise.

**Conclusion**

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone numbers for the

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organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0987.



Edward M. Johnson  
Primary Examiner  
Art Unit 1754

EMJ  
April 16, 2007